

ABSTRACT

The invention relates to a protein material which is effective to preserve progenitor cells, such as hematopoietic progenitor cells. The protein has an amino acid sequence comprising AQSLSFSFTKFD (SEQ ID NO:1) and a molecular weight of about 12-20 kD, or
5 has an amino acid sequence comprising VVAVEFD (SEQ ID NO:3) and a molecular weight of about 15-20 kD. Heterodimers of the protein are described, and multimers thereof. Methods of using the protein of the invention for preserving progenitor cells *in vitro*, *ex vivo*, and *in vivo* are also described. The invention, therefore, include methods such as
10 myeloablation therapies for cancer treatment wherein myeloid reconstitution is facilitated by means of the specified protein. Other therapeutic utilities are also enabled through the invention, for example, expanding progenitor cell populations *ex vivo* to increase chances of engraftation, improving conditions for transporting and storing progenitor cells, and facilitated gene therapy to treat and cure a broad range of life-threatening hematologic diseases.